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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/935,739	08/24/2001	Toshihiro Yamamoto	0033-0760P	9901

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EXAMINER	
PIERCE, JEREMY R	

ART UNIT	PAPER NUMBER
1771	

DATE MAILED: 03/12/2004

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary	Application No.	Applicant(s)	
	09/935,739	YAMAMOTO ET AL.	
	Examiner	Art Unit	
	Jeremy R. Pierce	1771	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☒ Responsive to communication(s) filed on *29 December 2003*.

2a)☒ This action is **FINAL**. 2b)☐ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) *1-8* is/are pending in the application.

4a) Of the above claim(s) *4-6 and 8* is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☒ Claim(s) *1-3 and 7* is/are rejected.

7)☐ Claim(s) _____ is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☐ The specification is objected to by the Examiner.

10)☒ The drawing(s) filed on *29 December 2003* is/are: a)☐ accepted or b)☒ objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11)☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

12)☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a)☐ All b)☐ Some * c)☐ None of:

1.☐ Certified copies of the priority documents have been received.

2.☐ Certified copies of the priority documents have been received in Application No. _____.

3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

1) ☐ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☐ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08) Paper No(s)/Mail Date _____.
4) ☐ Interview Summary (PTO-413) Paper No(s)/Mail Date. _____.
5) ☐ Notice of Informal Patent Application (PTO-152)
6) ☐ Other: _____.

DETAILED ACTION

Response to Amendment

1. Applicant's amendment filed on December 29, 2003 has been entered. Claims 1-5 have been amended. Claims 6-8 have been added.

Election/Restrictions

2. Newly submitted claims 6 and 8 are directed to an invention that is independent or distinct from the invention originally claimed for the following reasons: New claims 6 and 8 are related to claims 1-3 and 7 as process of making and product made. The inventions are distinct if either or both of the following can be shown: (1) that the process as claimed can be used to make other and materially different product or (2) that the product as claimed can be made by another and materially different process (MPEP § 806.05(f)). In the instant case the insulating material may be made by extruding a thin film onto the fabric rather than heating a surface of the fabric to form the film.

Since applicant has received an action on the merits for the originally presented invention, this invention has been constructively elected by original presentation for prosecution on the merits. Accordingly, claims 6 and 8, along with previously withdrawn claims 4 and 5, are withdrawn from consideration as being directed to a non-elected invention. See 37 CFR 1.142(b) and MPEP § 821.03.

Drawings

3. The drawings are objected to under 37 CFR 1.83(a). The drawings must show every feature of the invention specified in the claims. Therefore, the feature of the surface film layer formed from the heat-melting fibers and being substantially continuous must be shown or the feature(s) canceled from the claim(s). The drawings do not show the structure of a "substantially continuous" film. Additionally, Figure 3B does not label the nonwoven fabric (presuming it is a nonwoven fabric) between the two layers of film. No new matter should be entered.

A proposed drawing correction or corrected drawings are required in reply to the Office action to avoid abandonment of the application. The objection to the drawings will not be held in abeyance.

Specification

4. The substitute specification filed December 29, 2003 has been entered.

Claim Rejections - 35 USC § 112

5. The following is a quotation of the first paragraph of 35 U.S.C. 112:

> The specification shall contain a written description of the invention, and of the manner and process of making and using it, in such full, clear, concise, and exact terms as to enable any person skilled in the art to which it pertains, or with which it is most nearly connected, to make and use the same and shall set forth the best mode contemplated by the inventor of carrying out his invention.

6. Claims 1-3 and 7 are rejected under 35 U.S.C. 112, first paragraph, as failing to comply with the enablement requirement. The claim(s) contains subject matter which was not described in the specification in such a way as to enable one skilled in the art to

which it pertains, or with which it is most nearly connected, to make and/or use the invention.

The claims recite "a thin film formed by said heat-melting fibers being fused on a surface" of the fibrous insulating material. The specification states that heating the surface of the nonwoven fabric with infrared rays, a hot plate, or a heating roller creates a film layer (page8, lines 16-30). However, the specification does not set forth any structure to the film layer once said surface heating occurs. The claims now recite that the film is "substantially continuous." What structure does a person skilled in the art give a film that is "substantially continuous" without definition as to what substantially continuous? The specification says "the film layer blocks the flow of air contained in non-woven fabric thermal insulating material" (page 9, lines 13-16). But how is a film layer formed from an entangled (page 3, line 2) nonwoven fabric where only 5% of the fibers (page 7, line 25) actually melt? Normally in the art of melting fibers, the fibers would melt and bind the matrix fibers that surround them. The specification does not state how dispersed melting fibers in a nonwoven fabric melt to form a film layer. Why does a substantially continuous film layer form, rather than the heat melting fibers binding the matrix fibers in place?

In the second embodiment of the invention, Applicant describes stacking two or more of these fibrous layers with a film layer together and putting the stack body through a second heat treatment in a steam pot. The specification then states that the second heat treatment fuses the heat melting fiber inside the stack, but the thin film formed on the surface is maintained. Applicant does not state how the film layer is

maintained. It is not enabled as to how the remaining heat-melting fibers are all fused, but somehow the film layer remains intact. This is confusing because the heat-melting fibers and the film layer are made of the same material and are thus subject to melting at the same temperature. Why do the binder fibers melt and bond the matrix fibers, but the film layer does not melt and take on a characteristic similar to the binder fibers?

7. Claims 1-3 and 7 are rejected under 35 U.S.C. 112, first paragraph, as failing to comply with the written description requirement. The claim(s) contains subject matter which was not described in the specification in such a way as to reasonably convey to one skilled in the relevant art that the inventor(s), at the time the application was filed, had possession of the claimed invention.

The claims recite a "substantially continuous thin film" layer. There is no support in the specification for what a "substantially continuous thin film" layer is. The only support found for such a limitation is in Applicant's arguments, and the attached Figure A and Figure B. However, support for the claim limitations must come from the specification.

8. The following is a quotation of the second paragraph of 35 U.S.C. 112:

> The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

9. Claims 1-3 and 7 are rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

The claims recite a "substantially continuous thin film layer." To what degree must a film layer be continuous in order to qualify as substantially continuous?

Claim 3 recites that "heat is not readily conducted in the direction in which said card webs are stacked." What is the degree of heat conduction supposed to be compared to? Any web of fibrous material would inhibit heat conduction to some degree.

Claim Rejections - 35 USC § 102/103

10. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

> A person shall be entitled to a patent unless –
>
> (b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

11. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

> (a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the manner in which the invention was made.

12. Claims 1-3 and 7 are rejected under 35 U.S.C. 102(b) as being anticipated by or, in the alternative, under 35 U.S.C. 103(a) as obvious over Fukuhara et al. (WO 99/43903: Since this document is not in English, EP 1,059,393 to Fukuhara et al. will be used as the English equivalent).

Fukuhara et al. disclose a thermal insulating material made of matrix polyester fibers and heat-melting sheath-core composite fiber (page 3, lines 20-29). Applicant discloses in the specification that heating the surface of the nonwoven fabric to melt the heat-melting fibers forms the thin film (page 8, lines 19-20). In the heating process

disclosed by Fukuhara et al. (page 4, lines 32-44), the surface of the nonwoven fabric would be heated, and the fibers at the surface would melt. Even if the web were uniformly heated (i.e. more than just the surface of the web were subject to heat), the fibers at the surface would still melt in a similar manner. Although Fukuhara et al. does not explicitly teach the limitation of a thin film being formed, it is reasonable to presume that said limitations are inherent to the invention. Support for said presumption is found in the use of similar materials (i.e. matrix fiber in an amount of 40 to 95 percent and binder fiber in an amount of 5 to 60 percent) and in the similar production steps (i.e. two-stage heat treating to fuse the surface) used to produce the insulation material. The burden is upon the Applicant to prove otherwise. *In re Fitzgerald*, 205 USPQ 594. In the alternative, the claimed film layer would obviously have been provided by the process disclosed by Fukuhara et al. Note *In re Best*, 195 USPQ 433, footnote 4 (CCPA 1977) as to the providing of this rejection under 35 USC 103 in addition to the rejection made above under 35 USC 102. With regard to claim 2, a laminate is formed of the nonwoven fabrics by fusing the adjacent heat-melting fibers (page 6, lines 1-4). With regard to claim 7, the heat melting fiber has a lower melting point than the matrix fibers (page 3, line 28).

Response to Arguments

13. Applicant's arguments filed December 29, 2003 have been fully considered but they are not persuasive.

14. Applicant argues that the 35 USC 112 rejections are overcome because the amended claims recite that the thin film is defined as substantially continuous. However, this new amendment raises new issues of enablement, new matter, and indefiniteness, as set forth above in the rejections. Applicant is able to thoroughly define "substantially continuous" in the arguments. However, this structure must be found somewhere in the specification, and possibly the claims, in order for it to be given patentable weight. The structure of a "substantially continuous" film is not provided, so a person skilled in the art would not be enabled as to how to make it. Even Applicant's reference material (Attached Figures A-C) is not entirely clear what a "substantially continuous" film is. Applicant shows a thin film portion in Figure A. However, no "substantially continuous" film layer is readily discernable in that photo. It is not clear a person skilled in the art would refer to that amount of fiber melting as forming a film layer either.

15. Applicant also argues that the low-melting fibers contained in the thin film layer in the back side web can fuse and adhere to one another. Therefore, if the film layer and the web are alternatively stacked and a uniform heat-treatment is performed, the low melting fibers contained in the web will melt and adhere so as to create a thermal insulating material. However, this argument does not answer the enablement rejection to the stacked web. The Examiner contends that the film layer material and the low melting fibers (that have not yet melted in the web) are made of the same material. So when these nonwoven film composites are stacked onto one another, and uniform heat is applied to the stack, it is hard to see how the melting fibers would melt and bond the

web without the film layers also melting and bonding the web. Since both materials have the same melting points, would not the film layer fluidize as well? This would make a material where the film layer was no longer discernable. But the claim recites a discernable film layer. The Examiner does not see how a person skilled in the art would be enabled to melt the fibers into a fluidized state, and yet somehow be able to maintain the structure of the film.

16. Applicant argues that Fukuhara et al. teach uniformly heat-treating the entire carded web. Applicant asserts that in order to form the thin film of the present invention, at least one side of the card web is heated so as to form a film at the surface. But the Fukuhara et al. reference still measures up to this argument because Fukuhara et al. teach heating "at least one side" of the carded web. Neither Applicant's claims nor Applicant's arguments preclude heating the entire web. There is only the argument that at least one side need be heated, which is what Fukuhara et al. does. The Examiner must assume that the resulting film layer is inherent as set forth above in the rejection, because Applicant does not enable any structure to the claimed "substantially continuous" film layer. Since Fukuhara et al. use a similar material in a similar process, the Examiner has basis to assert that the resulting "substantially continuous" film layer would be inherent.

17. Applicant argues that the heat-treatment is not uniform in the direction of the thickness in the present invention. However, Applicant has not proven that non-uniform heat-treatment is necessary to form a "substantially continuous" film layer. Applicant's specification discloses that any heater capable of heating a surface of the fabric will

work, and that there are no limits on the type of heater (Paragraph 38). Even if a carded web were uniformly heated, heat-melting fibers that are present at the surface of the carded web would melt. The Examiner asserts that uniform heating will produce a "substantially continuous" film layer on the surface. The fibers at the surface are going to melt in a similar fashion, even if only the surface of the web were heated. This is especially true because the limitation of a "substantially continuous" film layer must be given broad interpretation without any structure defined in the specification.

Conclusion

18. **THIS ACTION IS MADE FINAL.** Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the mailing date of this final action.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Jeremy R. Pierce whose telephone number is (571)

272-1479. The examiner can normally be reached on Monday-Thursday 7-4:30 and alternate Fridays 7-4.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Terrel Morris can be reached on (571) 272-1478. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see http://pair-direct.uspto.gov. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

JRP

JRP

ELIZABETH M. COLE
PRIMARY EXAMINER